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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/518,443

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Antonio Luiz Duarte Braganca

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EXAMINER

MCDONOUGH, JAMES E

ART UNIT

PAPER NUMBER

1793

NOTIFICATION DATE

DELIVERY MODE

03/07/2008

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/518,443	<b>Applicant(s)</b> BRAGANCA ET AL.	
	<b>Examiner</b> JAMES E. MCDONOUGH	<b>Art Unit</b> 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-7, 9, 11-13, 15, 17-23, 25-35 and 37-61 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-7, 9, 11-13, 15, 17-23, 25-35, and 37-61 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2-7, 9, 11-15, 17-23, 25-28, 31-34, 37-51, and 53-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luciani et al., EP 0 480 435 (hereafter referred to as Luciani I). Luciani I discloses the invention substantially as claimed (p. 2, 1. 25-44; examples). Luciani I lacks disclosure of the thermal treatment of step (g) and the washing step (h) as well as various preferred embodiments of the present dependent claims. However, washing is a conventional trivial step in order to remove excess reagents, and the "thermal treatment" is so broad as to read on merely letting a composition sit at room temperature. It would have been obvious to one of ordinary skill

in the art to apply that skill to the disclosure of Luciani I with a reasonable expectation of obtaining a highly-useful method of making a catalyst component with the expected benefit of the catalyst to be usable in gas phase polymerization processes.

New claim 48 stands rejected as it is a combination of previous claims that were rejected under this reference.

New claims 49-51 are rejected as being disclosed in the reference. The reference discloses activating silica via heat treatment at 100-650°C for 1-20 hours (page 3, paragraph 2), a solid catalyst component used in the polymerization of ethylene (page 2, paragraph 3), and conducting the polymerization in the presence of activated particulate silica.

New claims 52-61 are rejected as being disclosed in the reference.

New claims 62-64, 67, 68, 70, and 73 are rejected as these are properties of the produced polymer and applicants have not shown that the composition of the reference can not produce polymers with these properties, applicants are reminded that there are no testing facilities at the USPTO.

New claim 65 and amended claims 48, 58, and 61 using the “consisting essentially of” language does not help to overcome the rejections as applicants have not shown that any additional ingredients/limitations materially change the invention.

New claim 66 is rejected as applicants have not shown that the reference does not read on this amount of Mg.

New claims 69, 71, and 72 are rejected as they are directed to products made with the composition and do not further limit the composition itself.

Claims 2-7, 9, 11-15, 17-23, 25-28, 31-34, 37-51, and 53-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over Luciani et al., EP 0 522 651 (hereafter referred to as Luciani II). Luciani II discloses the invention substantially as claimed (p. 2, 1. 27 to p. 3, 1. 35; examples). Luciani II lacks disclosure of the thermal treatment of step (g) and the washing step (h) as well as various preferred embodiments of the present dependent claims. However, washing is a conventional trivial step in order to remove excess reagents, and the "thermal treatment" is so broad as to read on merely letting a composition sit at room temperature. It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Luciani II with a reasonable expectation of obtaining a highly-useful method of making a catalyst component with the expected benefit of the catalyst to be usable in gas phase polymerization processes.

New claim 48 stands rejected as it is a combination of previous claims that were rejected under this reference.

New claims 50-51 are rejected as being disclosed in the reference. The reference teaches solid catalyst component of activated particulate silica for the (co)polymerization of ethylene (abstract).

New claims 52-61 are rejected as being disclosed in the reference.

New claims 62-64, 67, 68, 70, and 73 are rejected as these are properties of the produced polymer and applicants have not shown that the composition of the reference can not produce polymers with these properties, applicants are reminded that there are no testing facilities at the USPTO.

New claim 65 and amended claims 48, 58, and 61 using the “consisting essentially of” language does not help to overcome the rejections as applicants have not shown that any additional ingredients/limitations materially change the invention.

New claim 66 is rejected as applicants have not shown that the reference does not read on this amount of Mg.

New claims 69, 71, and 72 are rejected as they are directed to products made with the composition and do not further limit the composition itself.

Claims 2-7, 9, 11-15, 17-23, 25-28, 31-34, 37-51, and 53-73 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 91108239 (hereafter referred to as Neste).

Neste discloses the invention substantially as claimed (p. 7, 1. 8-16; examples 1-13). Neste lacks disclosure of the thermal treatment and washing steps of (g) and (h) respectively. However, such steps are conventional in chemical synthesis. It would have been obvious to one of ordinary skill in the art to apply that skill to the disclosure of Neste with a reasonable expectation of obtaining a highly-useful method of making a catalyst component with the expected benefit of the catalyst to be usable in gas phase polymerization processes.

New claim 48 stands rejected as it is a combination of previous claims that were rejected under this reference.

New claims 49-51 are rejected as being disclosed in the reference. The reference teaches activation of silica to remove the OH groups by thermally treating at

150-1000°C and carrying out the polymerization in the presence of a solid, activated, particulate silica support (abstract and page 12, paragraph 2).

New claims 52-61 are rejected as being disclosed in the reference.

New claims 62-64, 67, 68, 70, and 73 are rejected as these are properties of the produced polymer and applicants have not shown that the composition of the reference can not produce polymers with these properties, applicants are reminded that there are no testing facilities at the USPTO.

New claim 65 and amended claims 48, 58, and 61 using the “consisting essentially of” language does not help to overcome the rejections as applicants have not shown that any additional ingredients/limitations materially change the invention.

New claim 66 is rejected as applicants have not shown that the reference does not read on this amount of Mg.

New claims 69, 71, and 72 are rejected as they are directed to products made with the composition and do not further limit the composition itself.

### **Response to Arguments**

Applicants have submitted three separate declarations in an attempt to show the patentability of the instant invention. These declarations have been fully considered but are found not persuasive for the reasons given below.

Declaration showing commercial success.

The declaration of Dr. Marcia S. Lacerda Miranda filed 8 January 2008 under 37 CFR 1.132 has been considered. The declaration seek to establish a showing of commercial success as a secondary factor in the determination of patentability. The declaration is afforded no weight as to the rejections of the claims under 35 USC 103(a). It is pointed out that to establish a showing of commercial success there must be established a nexus, or a factually and legally sufficient connection, between the claimed invention and evidence of commercial success submitted. Applicants has failed to establish any connection between the claimed invention and the evidence of commercial success submitted. A "very high likelihood and expectation of commercial success" (from applicants own declaration, page 3, paragraph 1) is not the same as commercial success neither is the anticipation of sale of the rights to the patent. The intended use of the material figures presented are not adequately defined since the amount of intended use is not indicative of market share, and as such fail to establish a showing of commercial success. Note MPEP 716.03, 716.03 (a) and 716.03 (b) in this regard.

Declaration showing unexpected results.

The declaration is found not persuasive for at least the following: 1.) The amounts of catalyst used from the reference are from the examples only and applicants are reminded that a reference is good for all that it teaches, further this was a 103 obvious rejection and not an anticipation rejection and applicants have not argued why one skilled in the art would not be expected to able to adjust the amounts of catalyst

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and the references submitted by the applicants in their arguments actually give weight to examiner assertion the skilled artisan would be able to adjust these ratios. 2.) The results are not fully commensurate with the scope of the claimed invention. One example does not show that the invention as a whole is superior and unexpected and the skilled artisan would in no way be able to determine if the instant invention is unexpected and superior based on these few carefully selected examples. 3.) The results shown do not show that the instant invention is always superior and the only variable where it is seen that it is always superior if it can be called that is the bulk density and from these results we can not see that the instant application always has a higher bulk density nor can it be ascertained that the references can not attain this bulk density, especially considering that it is an obvious rejection and not an anticipation rejection.

#### Declaration of inventor's response to arguments

Applicants argue that silica is not a Lewis base. This is not persuasive for the reasons given in the last rejection applicants admit that a compound with oxygen atoms that have lone pairs of electrons are Lewis bases. Are applicants proposing that the oxygen atoms on silica do not have lone pairs of electrons? Applicant's argument silanols are acidic unlike polar solvents such as alcohols. 1.) Protons on alcohols are acidic and will react with alkyl aluminums the same way that the protons on a silanol can. 2.) Silica also has siloxane groups are applicants also proposing that these are not

Lewis basic? Further examiner would like to note that the claims use comprising language.

Applicants argue about the use of a polar solvent and that their claim excludes it. This is not persuasive because the claim reads that the catalyst produced does not contain the polar solvent and the references teach the removal of the solvent and further even applicants arguments admit that the aluminum alkyl used will sequester the polar solvent, so therefore the skilled artisan would expect that under these conditions there is no polar solvent remaining in the finished catalyst.

Applicants argue that other authors have demonstrated the effect of having versus not having any electron donor and provide references. This argument just further shows that this is a result effective variable as one skilled in the art would know how to adjust this for a given or desired application.

Applicants also argue that other authors have studied the effect of titanium concentration on catalyst activity. For the same reasons as given above this show that the amount of titanium is result effective, and it can not be determined what if any contribution applicants have contributed over the prior art.

Applicants argue pointing to Chang et al. and Mori et al. but both of these reference add weight to examiner argument about these being result effective variables since if it is understood how these changes affect a catalyst than they can be controlled and tuned for a given or desired application.

Applicants argue "As previously mentioned and demonstrated by diverse authors (see refs. 36, 44-45), the use of aluminum alkyls...can remove most of the electron

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donors presented in the catalytic composition...as a consequence, the effect 'selective poisoning' can be reduced since the electron donor can be also removed from catalytic composition through reaction with the cocatalyst" This supports the examiner contention that the electron donor will be removed and therefore, the examiner can see no difference that would add to the patentability of the instant invention. If both the instant invention and the reference can remove the electron donor, what is the difference between them?

Applicants argue " Summarizing, the electron donor removal from the catalyst leads to a higher heterogeneity of the sites, as already observed by several authors (see refs. 46-48)" This arguments add to examiners contention that one skilled in the art would be able to determine this.

Applicants argue that "it is common to use an excess of aluminum alkyl" if this is so then it would be common sense to add an excess of aluminum alkyl to the reference to remove the electron donor or based on applicants own arguments and submitted literature to not use an electron donor at any point in the synthesis of the catalyst.

Applicants argue "However, as proved before by other authors, residual electron donor can be remained after thermal treatment (see ref 49)" This teaches that they may be remained not that they will always be remained and if it is desirable to remove them and they are not needed in the synthesis, then it would be common sense not to include them in the first place as the removing step will add cost and complexity to the process.

Applicants argue that the ratio of Ti/Mg in the reference is the amounts used to prepare the catalyst and not the amount remaining in the final catalyst. This is not persuasive because one skilled in the art would expect that based on the teaching of different ratios it could be desired to make catalyst with different ratios and even the references submitted by applicants agree with this assertion, further applicants have not shown that changing the ratio of Ti/Mg in the synthesis solution will not change the ratio of Ti/Mg in the final catalyst, and if this is not the case then applicants application is not enabled as it does not tell one of ordinary skill in the art how one could adjust these ratios.

Applicants argue that calculating the ratio of Ti/Mg in the reference is impossible, if this is true how do applicants measure this? Are applicants proposing that using solutions with the claimed ratios from the references can not produce catalyst with the instantly claimed ratios? If this is the case applicants are requested to provide clear evidence that this can not be done.

### **Conclusion**

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAMES E. MCDONOUGH whose telephone number is (571)272-6398. The examiner can normally be reached on 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo can be reached on (571)272-1233. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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JEM 2/24/2008

**/Jerry A Lorengo/  
Supervisory Patent Examiner, Art Unit 1793**